III. The Claims Satisfy the Requirements of 35 U.S.C. §112, Second Paragraph

The Office Action rejects claims 1-5 and 12-14 under 35 U.S.C. §112, second paragraph, as indefinite. Claims 4 and 13-14 are cancelled, and claims 1-3, 5 and 12 are amended to obviate the rejection. Withdrawal of the rejection under 35 U.S.C. §112, second paragraph, is respectfully requested.

IV. The Claims Define Allowable Subject Matter

The Office Action rejects claims 1, 3, 5, 7, 9 and 13 under 35 U.S.C. §102(b) as unpatentable over JP 093034082 to Ando et al. (hereinafter "Ando"); claims 6 and 11 under 35 U.S.C. §102(b) as unpatentable over U.S. Patent 5,822,846 to Moritan et al. (hereinafter "Moritan"); and claims 2, 4, 8, 10, 12 and 14 under 35 U.S.C. §103(a) as unpatentable over Ando. The rejections are respectfully traversed.

Ando does not disclose an annular recess on the outer peripheral surface of the hole formed in the substantially cylindrical portion of the flange body to relieve a press fitting force exerted to the plurality of grooves, as recited in claim 1. Further, Ando does not disclose that the annular recess is for the purpose of restraining a distortion on an internal diameter of a sleeve when press-fitted into a flange and by limiting the purpose of restraining a distortion only on a plurality of grooves.

Instead, Ando discloses a flange 2, the inner surface of which has a plurality of linear convex or concave portions in an axial direction so as to restrain a distortion of the internal circumferential surface of the sleeve 1. Ando also discloses that a plurality of axially formed convexes on an internal diameter of the flange press an outer diameter of the sleeve, thus accordingly the internal diameter of a sleeve deforms in respect to a number of axially formed convexes on an internal diameter of the flange.

In the present invention, the internal circumferential surface of the hole 7a, where a plurality of grooves 15 are not formed, is allowed to be distorted within the limit of not

making the rotation of the shaft 12 obstructed. (See specification page 9, line 21 - page 10, line 3; page 14, line 25 - page 15, line 9; and page 15, line 22 - page 16, line 1.) In other words, the internal diameter of the sleeve where the axial positioned portion opposing to the press-fitted contact is allowed to be deformed because there are no grooves 15 on the portion opposing the press-fitted contact. Therefore, the limited amount of distortion can be accepted on the portion of the internal diameter of the sleeve which axially corresponds to the press-fitted contact.

For at least these reasons, it is respectfully submitted that claim 1 is distinguishable over the applied art. Claims 2-3, 5, 7, 11-12 and 15-17, which depend from claim 1, are likewise distinguishable over the applied art for at least the reasons discussed as well as for the additional features they recite. Withdrawal of the rejections under 35 U.S.C. §102(b) and §103(a) is respectfully requested.

V. Conclusion

In view of the foregoing amendments and remarks, Applicants submits that this application is in condition for allowance.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number set forth below.

Respectfully submitted,

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ATTACHMENTS:
Appendix
Petition for Extension of Time
Request for Approval of Drawing Correction

JAO:HNS/cfr

Date: March 17, 2003

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DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
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APPENDIX

Changes to Specification:

Page 11, lines 13-17:

A motor 1B includes a portion corresponding to the flange body 6 shown in Fig. 1 and a portion corresponding to the sleeve 7 shown in Fig. 1 which are formed ~~into an integral unit~~ in one-piece (hereinafter referred to as an integral sleeve 7A) of a stainless steel. The motor 1B has no annular recess 26 formed in the flange body 6 as shown in Fig. ~~1~~5.

Page 14, lines 3-9:

In Fig. 4, an ~~annual groove~~ annular recess 80 having the width of L is formed in the opening 6b of the sleeve fitting hole 6a of the inner peripheral wall of the center cylindrical portion 20 so as to relieve the press fitting force of the s leeve body ~~90~~ 9. There is also provided with another annular recess 26 or recess, similar to that of the first embodiment, formed in the inside portion of the inner peripheral wall of the center cylindrical portion 20 (away from the opening 6b of the sleeve fitting hole 6a).

Page 14, lines 10-13:

The annular ~~groove~~ recess 80 has the width L which is not smaller than the total length m of the thickness of the annular member 10 and the thickness of the counterplate 11 ($L \geqq m$) which are positioned in the annular stepped portion 8 of the sleeve body 9.

Page 14, lines 14-24:

The length m as the total thickness of the annular member 10 and the counterplate 11 is equal to the depth of the portion of the sleeve body 9 into which those members are fitted. In other words, such portion of the sleeve body 9 into which the annular member 10 and the counterplate 11 are inserted (The portion will be referred to as an annular member fitting portion 81, and corresponding thereto, the ~~groove~~ recess 80 is formed in the opening 6b of the sleeve fitting hole 6a.) has a small thickness, and is likely to greatly deform the annular

member fitting portion. The ~~groove~~ recess 80 formed in the opening 6b of the sleeve fitting hole 6a for corresponding to the annular member fitting portion 81 is capable of relieving the pressure force of the sleeve body 9 and preventing generation of the deformation.

Page 14, line 25 - page 15, line 9:

Like the first embodiment, the annular recess 26 is provided with this embodiment. When inserting the sleeve body 9 into the hole (sleeve fitting hole 6a) of the flange assembly unit 51 for integrating both members, the area of the contact portion therebetween is reduced. This may reduce the whole pressure force acting on the contact portion, and the deformation of the inner diameter portion 7a of the sleeve body 9 caused by press fitting thereof can be decreased. As a result, the respective configurations of the inner diameter portion 7a of the sleeve body 9 and the flange body 6 can be prevented from being deformed. The area of the contact portion between the sleeve body 9 and the flange body 6 is further reduced owing to the ~~groove~~ recess 80, further contributing to the suppression of the deformation of the inner diameter portion 7a of the sleeve body 9 and the flange body 6.

Page 15, lines 10-12:

Although the fourth embodiment employs the ~~groove~~ recess 80 that is annularly configured, the configuration is not limited, and at least one arch-shaped cut off may be formed.

Page 15, lines 16-17:

In the fourth embodiment employing the annular recess 26, it may be eliminated and provide a ~~groove~~ recess 80 only as a recess.

Page 16, lines 8-14:

According to the fifth aspect of the present invention, as the respective portions corresponding to the flange body and the sleeve body in any one of the first to the forth aspects are ~~integrally~~ formed in one-piece, deformation caused by the press fitting of the

sleeve, which has been experienced in the conventional art can be prevented. As a result, the process for press fitting the sleeve into the flange body can be eliminated, which has been required in the conventional art, thus improving the productivity.

Changes to Claims:

Claims 4, 6, 8-10 and 13-14 are canceled.

The following is a marked-up version of the amended claims:

1. (Amended) A motor in which a rotor is provided with a magnet opposing to ~~the~~ a stator ~~of the~~ on a flange body, comprising ~~a flange formed of a~~ an annular extending step formed on an peripheral surface of a substantially cylindrical portion of the flange body for holding ~~a~~ the stator ~~and~~, a sleeve which is press fitted and/or secured by adhesion into a hole formed in the substantially cylindrical portion of the flange body, ~~receives~~ a shaft of ~~a~~ the rotor is inserted ~~through~~ into an inner hole of the sleeve, and ~~defines a fluid bearing together with the shaft, wherein~~ a plurality of grooves are formed on a peripheral surface of the inner hole of the sleeve, characterized in that an annular ~~a~~ recess is formed ~~at an opening of a wall with a hole~~ on the peripheral surface of the hole formed in the substantially cylindrical portion of the flange body to relieve a press fitting force exerted to the ~~sleeve~~plurality of grooves.

2. (Amended) A motor according to claim 1, wherein ~~the recess is of an annular shape~~the annular recess is a plurality of annular recesses.

3. (Amended) A motor according to claim 1, wherein the annular recess ~~constitutes a cut off portion formed at an opening of the hole~~ is formed ~~on the wall and/or a grooved recess formed on the inside area of the hole formed on the wall~~axially positioned opposing to where the grooves are formed on the peripheral surface of the inner hole of the sleeve.

5. (Twice Amended) A motor according to claim 1, wherein ~~the sleeve is provided with a substantially cylindrical flange body into which the shaft is inserted, and~~ a portion corresponding to the substantially cylindrical portion of the flange body for holding the stator and a portion corresponding to the sleeve ~~body~~ are ~~integrated~~ in one-piece, the one-piece portion is press fitted and/or secured by adhesion into an opening of the flange body.

7. (Amended) A method of manufacturing a motor ~~in which a rotor is provided with a magnet opposing to the stator of the flange, including a flange formed of a flange body for holding a stator and a sleeve which is provided with a recess and press fitted into a hole formed in the flange body, receives a shaft of a rotor inserted through an inner hole, defines a fluid bearing together with the shaft, and is further provided with a flange body having a substantially cylindrical shape into which the shaft is inserted~~, according to claim 1 comprising the steps of:

press fitting and/or securing by adhesion the sleeve ~~body finished by machining~~ into ~~a~~ the hole formed in the substantially cylindrical portion of the flange body, ~~and~~

inserting the shaft ~~of the rotor~~ into the inner hole of the sleeve ~~body~~ so as to define a fluid bearing unit,

dispensing a fluid, and

completing the motor in which the rotor is provided.

11. (Amended) A method of manufacturing a motor ~~including a flange formed of a sleeve having a lower bulge and a flange body, wherein a rotor is provided with a magnet opposing to a stator of the flange, and the stator is supported by the lower bulge of the sleeve~~ according to claim 5, comprising the steps of:

press fitting ~~the~~ and/or securing by adhesion a lower bulge of the sleeve ~~body finished by machining~~ into ~~a hole~~ the opening of the flange body, ~~and~~

inserting the shaft ~~of the assembled rotor~~ into the inner hole of the sleeve body so as to define a fluid bearing unit,

dispensing a fluid, and

completing the motor in which the rotor is provided.

12. (Amended) A motor according to claim ~~2~~1, wherein ~~the sleeve is provided with a substantially cylindrical flange body into which the shaft is inserted, and~~ a portion corresponding to the flange body and ~~a portion corresponding to~~ the sleeve ~~body~~ are ~~integrated~~in one-piece.